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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,535	08/23/2001	Yaron Haviv	P-3463-US	7817

7590 05/17/2007  
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Alexandria, VA 22314

EXAMINER

PRIETO, BEATRIZ

ART UNIT	PAPER NUMBER
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2142

MAIL DATE	DELIVERY MODE
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05/17/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

09/934,535

Applicant(s)

HAVIV, YARON

Examiner

Prieto B.

Art Unit

2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11-16,25-31 and 41-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-16,25-31 and 41-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/23/07 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***DETAILED ACTION***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/19/07 has been entered.

2. Applicant's arguments with respect to claims 11-16, 25-31 and 41-51 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejection under 35 USC 103***

3. Claims 11-16 are rejected under 35 USC 103(a) as being unpatentable over Gidwani (US 6,640,239) in view of Bunton (US 7,010,607)

Regarding claim 11, Gidwani discloses:

a router process traffic over a connection from a first computer to a second computer, both computers having multi-channel reliable network hardware (Gidwani column 23, lines 1-15, Fig. 2 and column 41, lines 25-52); however Gidwani does not explicitly teach remote direct memory access.

Bunton teaches enabling said second computer to directly transfer data to said first computer over said connection using remote direct memory access messages (column 9, lines 25-33 and col. 13, lines 29-49); and

having said router process non-remote-direct-memory-access traffic from said second computer to said first computer over said connection (Fig. 1, FIO switch elements, column 14, lines 25-38, table 12 which interfaces to support SCSI, Fibre channel and Ethernet channels col. 3, lines 37-50).

Art Unit: 2142

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Bunton to increase scalability, increase bandwidth while supporting Internet technology (col. 3, lines 54-5)

Regarding claims, wherein said router processes said traffic within or above a transport layer only (Bunton support transport layer functionality traffic between endnodes (computer) (Bunton col. 12, lines 1-10 and transport services only see col. 14, lines 25-32).

Regarding claim 13, having said router filter said traffic according to a predefined policy (Bunton col 53, lines 1-3 and 45, lines 53-54).

Regarding claim 14, having said router gather information on said traffic (Bunton col 51, lines 46-49, 59-62).

Regarding claim 15, having said router select said second computer from a group of computers having multi-channel reliable network hardware according to information in said traffic (Bunton col 51, lines 34-32).

Regarding claim 16, having said router select said second computer from a group of computers having multi-channel reliable network hardware according to load-balancing considerations (Gidwani column 11, lines 48-51).

4. Claims 25-31 and 41-51 are rejected under 35 USC 103(a) as being unpatentable over Gidwani in view of Bunton in further view of Forin (US 6,360,220)

Regarding claims 25-31, although the above-mentioned references performs optical and power conversion functions, it does not explicitly teach converting a session of packet-oriented traffic into transactions comprising remote direct memory access message.

Art Unit: 2142

Forin teaches converting a session of packet-oriented (session-connection packet, API socket based or TCP/IP based) traffic into transactions comprising remote direct memory access messages (Forin col. 23, lines 53-column 24, line 18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the teachings of Forin because it would enable the conversion of RDMA traffic (e.g. requests) to or from a non-remote direct memory access (virtual interface architecture) traffic and associated operations to be performed a non-remote direct memory access as suggested by Forin including video/audio traffic or any type of data from a storage device (col 23, line 53-col 24, line 18).

Regarding claims 28-29, and 31, these claims are substantially the same as claims 13-14, and 16 same rationale of rejection is applicable.

Regarding claim 30, routing said transaction according to information in said traffic (e.g. an header address) (Bunton col. 39, lines 44-46).

Regarding claims 41-51, this claims comprises limitation substantially the same as those discussed on claims 1-16 and 25-31, same rationale of rejection is applicable.

#### ***Citation of Pertinent Art***

5. The following prior art made of record and considered pertinent to applicant's disclosure. References which whether the constitute prior art or do not qualify as prior art may be relied upon to show the level of ordinary skill in the art at or around the time the invention was made. The references may be relevant to establishing a motivation to combine which is implicit in the knowledge of one of ordinary skill in the art (see MPEP §2141.02). Copies of Non-Patent Literature documents cited will be provided as set forth in MPEP§ 707.05(a):

(US 6,493,343) Gelman et. al. teaches converting (translating) packet-oriented traffic into transactions comprising remote direct memory access (RDMA) messages.

*Response to Arguments*

6. Applicant's arguments regarding the effective filing date of the Krause reference relied upon for the rejection of claims 11-16, 25-31 and 41-51 have been considered. In this case applicant argued that the effective filing date on the Krause patent (US 2003/0195983) is not the date of the provisional application US 60/154,150 because according to applicant's interpretation of the reference (p. 11 of remarks), there is "no mention of RDMA combined with non-RDMA communication in these applications" and further, because according to applicant the 60/154,150 provisional application "only mentions the basic definitions of RDMA, without giving any specific teachings as to its implementation, either alone or in concert with other communication technologies."

In response to the above-mentioned argument, applicant's interpretation of the applied reference and its provisional application has been fully considered. In this case, the provisional discloses the portions relied on by the patent. Specifically, the portions relied on the patent can be found on the provisional: (i) section 2.2.1 pages 28-29 contain the same subject matter as paragraphs 61-62 on the Krause patent; (ii) Figure 1 on patent also relied on can be found on Figure 1 of the provisional on page 26; (ii) Chapter 2: Architectural Overview on page 26 contain the subject matter disclosed on paragraph 0041 relied upon as the basis of the above-mentioned rejection for claim 1.

The following portion in the Krause patent and the provisional application has been reviewed.

Remote DMA (RDMA) Read -- a memory semantic operation to read a virtually contiguous buffer on the remote node. The RDMA Read WQE reads a virtually contiguous buffer on a remote endnode and writes the data to a virtually contiguous local memory buffer. Like the Send WQE, the local buffer is in the address space of the process that created the local QR. The remote buffer is in the virtual address space of the process owning the remote QP targeted by the RDMA Read.

Applicant's characterization of the above-portion as being "the basic definitions of RDMA, without giving any specific teachings as to its implementation, either alone or in concert with other communication technologies" is not persuasive and inconsistent with the reference's

Art Unit: 2142

disclosure. The above portion provides to one of ordinary skill the RDMA's "implementation" describing what does the operation perform, as oppose to simply what it is, as argued. In this case, a remote DMA (RDMA) Read reads a virtually contiguous buffer on a remote endnode and writes the data to a virtually contiguous local memory buffer. Like the Send WQE, the local buffer is in the address space of the process that created the local QR. The remote buffer is in the virtual address space of the process owning the remote QP targeted by the RDMA Read.

7. Applicant further argues that claim limitations of claims 11, 25 and 41 go beyond the mere definition of RDMA, but rather are directed to a novel implementation of RDMA *with non-RDMA communication protocols*.

In response to the above-mentioned argument, claims 11, 25 and 41 have been reviewed, but it remains unclear exactly where is a *non-RDMA communication protocol* recited in these claims. The specification has been reviewed however, it also remain unclear where is the argued allegedly claimed term "*non-RDMA communication protocol*" defined in the disclosure as filed.

The detail description of the invention is a dictionary for the claims and should provide clear support or antecedent basis for all terms used in the claims. See 37 CFR 1.75, MPEP § 608.01(i), § 608.01(o), and §1302.01. An applicant is entitled to be his or her own lexicographer and may rebut the presumption that claim terms are to be given their ordinary and customary meaning by clearly setting forth a definition of the term that is different from its ordinary and customary meaning. See *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994) and *Vitronics Corp. v. Conceptronic Inc.*, 90 F.3d 1576, 1582, 39 USPQ2d 1573, 1576 (Fed. Cir. 1996). (see MPEP 2106). An inventor may define specific terms used to describe invention, but must do so "*with reasonable clarity, deliberateness, and precision*" and, if done, must "set out his uncommon definition in some manner within the patent disclosure" so as to give one of ordinary skill in the art notice of the change" in meaning (see MPEP 2111.01(III)). However, in absence of an express intent to impart a novel meaning to the claim terms, the words are presumed to take on the ordinary and customary meanings attributed to them by those of ordinary skill in the art.

Art Unit: 2142

Since there was no definition given for the term “*non-remote-direct-memory-access traffic*” in the specification, the term should be given its broadest reasonable interpretation and take on the ordinary and customary meaning attributed to it by those of ordinary skill in the art.

In this case, the claim term “*non-remote-direct-memory-access traffic*” has been applied the broadest reasonable interpretation in light of the specification, and thereby will be interpreted as an traffic.

8. Applicant further argues that claim limitations of claims 11, 25 and 41 go beyond the mere definition of RDMA, but rather are directed to a novel implementation of RDMA *with non-RDMA communication protocols*.

In response to the above-mentioned argument, [AS BEST UNDERSTOOD] applicant argues the combination of protocols as the novel aspect of the invention, this is presuming the non-RDMA communication protocol, is broadly any other protocol not RDMA. It remains unclear if applicant has invented a new protocol called “*non-RDMA communication protocol*” however in light of the disclosure it is taken that this is not the case. Thus, if “non-RDMA communication protocol” is not a new protocol, then applicant appears to argue the combination of elements found in the prior art. A combination of familiar elements according to known method is likely to be obvious when it does no more than yield predictable results See *Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp.*, 340 U. S. 147, 152 and see e.g., *United States v. Adams*, 383 U. S. 39, 50–52.

9. All applicant’s arguments filed with the above-mentioned communication have been fully considered.



Art Unit: 2142

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prieto, B. whose telephone number is (571) 272-3902. The Examiner can normally be reached on Monday-Thursday from 5:30 to 2:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Andrew T. Caldwell can be reached at (571) 272-3868. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800/4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system, status information for published application may be obtained from either Private or Public PAIR, for unpublished application Private PAIR only (see <http://pair-direct.uspto.gov> or the Electronic Business Center at 866-217-9197 (toll-free)).

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